Bmk. No. B-12
Chief Engineer PLD Class I, XH-4742-16

MAJOR DUTIES

Serves as Chief Engineer on a Class I pipeline dredge (18" discharge and over). The dredge is either a diesel-electric, steam, or steam-electric powered self-propelled cutterhead or dustpan dredge operating in inland waters of the U.S. Through subordinate assistant engineers, supervises the work of approximately 10-20 subordinates assigned to three shifts employed in a variety of trades and crafts occupations. Stands a regular watch in the engine room. Exercises 24-hour responsibility for the operation, maintenance, and repair of all engine room and associated machinery, refrigeration, plumbing, heating, and electric/electronic systems and attendant plant. In this capacity, accomplishes the following:

1. Exercises supervisory responsibility over the dredge engine room crew employed in any of a variety of trades occupations including assistant engineers, strikers, marine-oilers, fireman-water tenders, welders, machinists, marine electricians, and electronics mechanics.

a. Planning. Periodically inspects all engine room and auxiliary machinery, equipment and systems, and attendant plant to determine the condition, maintenance needs, and required operating repairs. Plans weekly and monthly work schedules, shift assignments and sequences of work operations for subordinates. Establishes deadlines and priorities on the basis of general work schedules, methods and policies established by the Master. Determines work methods and procedures to be used; number and types of employees required; and tools, equipment, and materials required to accomplish the work. Determines how many assignments can be accomplished concurrently. Insures that tools, materials, and supplies necessary to accomplish the work available. Makes cost estimates and estimates materials and manhours required to accomplish such repairs. Consults with Master relative to recommendation for major operating repairs and overhauls and obtains required authority for accomplishment of the work. Provides support to the Master in compiling annual layup repair, maintenance, and modification requirements.

b. Work Direction. Selects or participates with considerable weight in the selection of workers. Assigns individuals to shifts and through the assistant engineers on the shift, directs the work efforts of subordinates. Explains work requirements, methods, and procedures; instructs subordinates in new work procedures; and provides technical advice and guidance when problems arise. Through the first assistant engineer, reviews the work of shift crews and makes periodic inspections of all completed repairs. Makes adjustments, plans, assignments, and methods as necessary to accomplish the work as effectively and economically as possible. Determines the tools, equipment, supplies, and maintenance required on the three shifts and takes action to assure the arrival of supplies, parts, and equipment as needed. Through subordinate assistant engineers, evaluates work in progress and assures that quality standards and quantity requirements are met. Coordinates the work of the engine room with related or impacted work of other dredge crews. Personally directs repairs involving major breakdown of equipment.

c. Administration. Schedules and approves the leave of subordinates. Sets performance requirements and prepares performance standards and makes formal and informal performance appraisals. Counsels employees on problems referred by assistant engineers and adjusts informal complaints through discussion with employees, assistant engineers, and union representatives. Takes informal corrective action on conduct or performance problems and refers serious problems along with recommendations for disciplinary action to Master for resolution. Plans necessary on-the-job training and insures that such training is effectively and adequately carried out. Promotes the participation of subordinates in programs such as the suggestion program, cost reduction programs, etc. Prepares and maintains engine room production reports and records such as engine room logs and reports reflecting work performed, repairs made, temperature and/or gage readings, and monthly reports to Headquarters office. Compiles annual repair and overhaul lists and estimates the time and effort required to accomplish such work during the non-dredging season. Requisitions all spare and replacement parts and materials. Periodically reviews job descriptions of subordinates for currency and accuracy; reports detailing of employees to jobs other than their own; initiates or participates in review and improvement of work methods, organizational features, and the structuring of positions to eliminate unnecessary ones. Accomplishes supervisory functions in accordance with organizational EEO and Affirmative Action programs.

d. As the supervisor of others is responsible for the instruction and training of subordinates in the safe and efficient performance of their duties and for studying the operation supervised with a view to correcting or reporting for correction any unsafe conditions or unsafe work practices that might cause injury to employees or persons or property damage.

2. Supervises, directs, and/or personally performs repair work of a highly technical nature during dredge operation. Inspects and diagnoses dredge engine, attendant equipment or plant, or related systems failures and determines the repairs necessary. Visually inspects the engine room, machinery and equipment, and electric and/or electronic systems to insure that they are maintained in a clean and orderly fashion. Furnishes information as to the status of work and compiles workload data pertinent to the impact of repairs on operational plans and requirements. Is responsible to the Master for the maintenance and security of all tools, supplies, and equipment issued to the engine room department.

3. Is responsible for preparing machinery and equipment for preservation during layup. Supervises all repair made to dredge mechanical and electrical equipment during annual layup repairs. Incumbent may be assigned to the maintenance and repair of floating plant or other essential duties during annual layup periods.

Performs other duties as assigned.

SKILLS AND KNOWLEDGES

Must hold a U.S. Coast Guard Chief Engineer's license commensurate with the type engine room machinery and equipment, horsepower, and characteristics of the vessel to which assigned. A knowledge of the dredge steam, steam electric, or diesel electric mechanical, and/or electronic equipment, systems, and auxiliary plant and machinery, and the related skill requirements to diagnose problems and malfunctions and supervise and participate in the repair, replacement, and

modification of such machinery, engines, and systems. Applies the knowledge to understand how such equipment and systems operate individually or in combination and the ability to plan and lay out repair, replacement, maintenance, and modification plans and requirements ranging from those of a minor nature to those of extreme complexity. Applies a knowledge of the fuel and water treatments associated with the various equipment and systems.

Knowledge and ability to interpret and apply working drawings, sketches, diagrams, blueprints, and various information reflected in technical manuals. Applies knowledge of advanced shop math to accomplish computations pertinent to electricity and electronics, electronic equipment, air conditioning and heating, refrigeration and mechanical dimensions, tolerances, and voltages. Applies skill and knowledge in the use of a variety of testing instruments including refrigeration gages and temperature testers in diagnosing problems and malfunctions, and a variety of measuring devices including feeler gages, vernier calipers, inside and outside calipers and micrometers, thread gages, dial indicators, screw pitch gages, protractors, dividers, composers, steel squares, clinometers, etc. Applies skill to accomplish work to tolerances of .001 inch.

Skill and knowledge in the use of lathes, shapers, drill press, milling machines, honing equipment, grinders, jig borers, jog grinders, power hacksaws, electric and acetylene welding and flame cutting processes, and a variety of electric and hand tools common to the trades involved. Applies a knowledge of the characteristics of a variety of metals and alloys such as stainless, monel, brass, bronze, babbit, silver, aluminum, mild and hardened steels, etc.

RESPONSIBILITY

Works under the general supervision of the dredge Master. Receives oral and written assignments including blueprints, drawings, and charts; and plans and accomplishes work in accordance with standard procedures, directives, regulations, U.S. Coast Guard regulations, and overall marine requirements. Receives no technical guidance in operation of engine room facilities and exercises independent judgment and initiative in connection with the operation and maintenance of all mechanical and electrical equipment. Work is subject to spot checks for proficiency of performance as determined from continuity of operation. Engine room facilities are subject to annual inspection by U.S. Coast Guard for compliance with marine safety regulations.

WORKING CONDITIONS

Work is performed inside and outside subjecting employee to varying climatic conditions, abnormal noises, temperature, danger of burns, irritation from grease and oils, bruises, strains, danger from attending moving machinery, falling overboard, electrical shock, falls on slippery decks or steep stairways, possible drowning, and crankcase explosion.

PHYSICAL EFFORT

Incumbent performs work from ladders, scaffolding, and platforms and where the parts, equipment, or systems are in hard-to-reach places. Work requires the incumbent to stand, stoop, bend, kneel, climb and work in a tiring and uncomfortable position. Frequently lifts, carries, and sets up parts and equipment that weigh up to 40 pounds.